

## **“Valuing Goods Allocated by Dynamic Lottery”**

**Carson Reeling  
Assistant Professor**

**Department of Agricultural Economics  
Purdue University**

*(Joint with Valentin Verdier and Frank Lupi)*

### **Abstract**

Resource managers often use “dynamic lotteries” to allocate access to recreational opportunities. Under these lotteries, applicants’ probability of winning access increases with their seniority, earned by being unsuccessful in past drawings. Winning access means forfeiting one’s seniority. Hence, applicants under a dynamic lottery face intertemporal trade-offs in making their application choices and have incentives to be forward-looking. We use a structural dynamic discrete choice model to estimate willingness to pay (WTP) for black bear hunting opportunities in Michigan, permits for which are allocated via dynamic lottery. We show that forward-looking behavior has important implications for welfare estimation. Applicants sort themselves across sites by time and individual preferences for hunting. This sorting allows applicants to mitigate welfare losses from policy shocks. Ignoring this sorting leads to biased estimates of WTP. We also extend prior work by deriving a theoretically-consistent measure of applicants’ marginal WTP for quality characteristics of lottery-rationed goods.